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### Th17 cells in autoimmunity

Naïve CD4<sup>+</sup> T helper cells could differentiate to Th1, Th2 and Th17 cells. Th1 cells produce IFN $\gamma$  while Th2 cells produce IL-4 and IL-5 but not IFN $\gamma$ . Th17 cells are characterized by their expression of IL-17A, IL-17F, IL-21 and IL-22. IL-1 $\beta$ , IL-6 and TGF $\beta$  are critical cytokines for promoting Th17 cell differentiation while IL-27 and IL-10 inhibit the differentiation of Th17 cells. In addition, IL-23 is believed to be involved in maintaining Th17 cell phenotype in vitro and it is critical for the differentiation of Th17 cells in vivo. IL-17 and Th17 cells play important role in the host defense as well as in the pathogenesis of autoimmune diseases. Pathogenic but not protective Th17 cells alone could induce experimental autoimmune encephalomyelitis (EAE). Blocking IL-17 and/or Th17 cell function can ameliorate several autoimmune diseases in animal models such as EAE, inflammatory bowel disease (IBD) and collagen-induced arthritis (CIA). In humans, IL-17 and Th17 cells are correlated with rheumatoid arthritis, psoriasis and inflammatory bowel disease. Neutralizing anti-IL-17 or anti-IL-17 receptor monoclonal antibodies have demonstrated remarkable efficacy in psoriasis patients. Intervention of Th17 cell function but not just IL-17 alone could provide better efficacy in several autoimmune diseases.

### Biography

Jianfei Yang is a senior scientist and a project leader for a Th17 cell target at Tempero Pharmaceuticals, a GSK company, in Cambridge, MA, USA. He received a PhD in Pathology from Niigata University in Japan in 1997. He then obtained postdoctoral training in Dr. Ken Murphy's lab at HHMI and Washington University. In the past 15 year, he has been studying the role of CD4<sup>+</sup> T helper cells in immunity and diseases. He has more than 10 years of experience in autoimmune disease research and pharmaceutical drug development. He has published numerous papers and patents.

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